REMARKS/ARGUMENTS

Claims 18-20 and 37-38 are pending and under examination. Applicants filed an Amendment and Notice of Appeal on September 22, 2003. An Advisory Action was mailed on October 16, 2003. The below response takes into account the rejections raised in the March 21, 2003 Office Action and the Advisory Action.

Applicants have herein amended the title and included a portion of the specification of U.S. Patent No. 4,801,685 which was incorporated by reference into the subject application. In addition, applicants have herein amended claims 18-20. These amendments do not involve any issue of new matter. Support for these amendments may be found *inter alia* in the specification at page 7, lines 2-10, page 16, lines 18-22 and page 6, lines 1-15. Entry of this amendment is respectfully requested such that claims 18-20 and 37-38 will be pending.

Rejection under 35 U.S.C. 112, first paragraph

The Examiner rejected claims 18-20 and 37-38 under 35 U.S.C. 112, first paragraph, alleging that applicants are not in possession of the claimed invention. The Examiner is arguing that the polypeptide being claimed was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors had possession of the claimed invention. The Examiner is further arguing that the specification does not enable the claimed invention.

In response, applicants respectfully traverse the Examiner's above rejection. Nevertheless, applicants without conceding the correctness of the Examiner's position but to expedite prosecution of the subject application have herein amended the claims. Claim 18 now recites "cytokine." Applicants submit that the claims are sufficiently described and enabled.

With respect to written description, first applicants respectfully point out that the specification provides examples of mutant cytokines, such as the IFN-α, which differs by one to six amino acids from the normal cytokine and is encoded by a nucleic acid which hybridizes under high stringency to the gene encoding the normal cytokine. *See* page 9 of the specification.

See also page 6, lines 1-15 for support. The IFN mutants are representative embodiments of the claimed cytokine mutant polypeptides. It is clear that applicants were in possession of the claimed mutant cytokine polypeptides.

In addition, applicants respectfully direct the Examiner's attention to *Moba B.V. v. Diamond Automation Inc.*, 66 USPQ2d 1429 (Fed. Cir. 2003) where the Court determined that there was adequate written description for the claimed invention. In his concurring opinion, Judge Radar stated that the Federal Circuit has been "apply[ing] the written description doctrine beyond the purpose for which the doctrine was created, namely priority protection" thereby "produc[ing] numerous unintended and deleterious consequences." *Moba,* 66 USPQ2d at 1140. Radar proclaimed that one of the "unintended consequences" of this "judge-made" "expanded written description doctrine" was that "[e]ach time a claim encompasses more than the preferred embodiment of the invention described in the specification, a defendant can assert that the patent is invalid for failure to describe the entire invention" and consequently "every claim construction argument could conceivably give rise to a validity challenge as well." See *Moba,* 66 USPQ2d at 1140. Radar proclaimed that in *Moba*, the Court did not fall for the argument that a claim encompassing a certain mechanism must be invalid because the specification did not disclose such mechanism. See *Moba,* 66 USPQ2d at 1140. Radar maintained that the "Lilly doctrine simply makes no sense...outside it proper context of policing priority." See *Moba,* 66 USPQ2d at 1141.

Judge Radar then explained that §112, ¶1 indicates that there is sufficient description if the patent enables the invention. Consequently, any disclosure which is enabling, "by definition, also shows that the inventor was in possession of that full invention." See *Moba,* 66 USPQ2d at 1141. However, Radar concludes that the only way to distinguish the *Lilly* rule from enablement is to construe *Lilly* as requiring more disclosure than necessary to enable the invention, thereby creating a "super-enablement standard." See *Moba,* 66 USPQ2d at 1142. Radar states that such a non-statutory "super-enablement standard" jeopardizes the validity of many biotechnology inventions because inventors prior to 1997 could not have forseen such a "super enablement standard" which has not been applied to computer inventions. See *Moba,* 66 USPQ2d at 1142.

As seen in *Enzo Biochem Inc. v. Gen-Probe Inc.,* 63 U.S.P.Q.2d 1609 (Fed. Cir. 2002), the viability of the non-statutory Lilly written description rule is on the decline, and that the

Federal Circuit has begun to convert the Lilly rule into an "enablement doctrine with a different label" since "to enable is to show possession, and to show possession is to enable." See *Moba,* 66 USPQ2d at 1143. Rader concludes:

> "In sum, the *Lilly* rule is not just a mere one-time mistake. It defies over thirty years of case law. It finds no specific support in any statutory language. It creates a technology-specific rule in a technology-neutral statute. It distorts the statute's rules for adequate disclosure of inventions. It complicates biotechnology patent drafting to the point of near impossibility and invites invalidating mistakes. It prices non-corporate inventors out of some biotechnological invention markets. Last, but not least, it burdens both trial and appellate courts with unnecessary and confusing procedures in otherwise simple cases like this one." See *Moba,* 66 USPQ2d at 1143.

In view of Judge Radar's comments, Applicants submit that the Examiner is improperly applying a heightened written description standard because this is not a question of priority and new matter. At issue here is merely a question of whether there is written description support for the claimed invention, and applicants submit that the claimed invention is sufficiently described. As stated above, the specification provides examples of mutant cytokines, such as the IFN-α, which differ by one to six amino acids from the normal cytokine and is encoded by a nucleic acid which hybridizes under high stringency to the gene encoding the normal cytokine. It is clear that applicants were in possession of the claimed mutant cytokine polypeptides. Moreover, one skilled in the art would be able to practice the claimed invention without undue experimentation. It is well established that disclosure of every operable species is not required and that the mere disclosure of a single species can be sufficient. *See In re Vickers*, 141 F.2d 522 (CCPA 1944); *See also In re Cook*, 439 F2d 730, (CCPA 1971).

Moreover, as Judge Radar clarified as discussed above, §112, ¶1 indicates that there is sufficient description if the patent enables the invention. Applicants note that U.S. Patent No. 6,001,589 (the "'589 patent"), issued December 14, 1999, is a counterpart to the subject application. A copy of the issued claims in the '589 patent is attached hereto as Exhibit A for the Examiner's convenience. Applicants note that claim 1 of the '589 patent recites in part:

> A method of identifying a modified polypeptide encoded by a gene that has been mutated, wherein the polypeptide is a secreted protein selected from the group consisting of **cytokines...** and wherein the polypeptide is not encoded by a oncogene or tumor suppressor gene, and wherein the mutation occurs during the pathological process of tumor formation, comprising the steps of: ...[emphasis

added]

This claim embraces a method of identifying, among other things, a modified cytokine, such as the modified cytokine claimed in the subject application. By virtue of the issuance of this claim in the '589 patent, the Patent Office has acknowledged that the methodology is enabled. Since a method of identifying the cytokine is enabled, applicants submit that the cytokine itself is enabled too since the Patent Office has effectively acknowledged that the specification enables one to make and use such a cytokine. Applicants submit that since the invention is enabled, then it must also be sufficiently described, as Judge Radar effectively proclaimed. Applicants contend that these remarks and amendments obviate the above rejection and respectfully request that the Examiner reconsider and withdraw this ground of rejection.

In addition, applicants respectfully traverse the Examiner's rejection and submit that the claimed invention is enabled. Applicants remind the Examiner that the claimed invention relates to a purified or recombinantly produced polypeptide comprising a mutant cytokine amino acid sequence. Applicants note that the rejection in the March 21, 2003 Office Action states that the issue is that applicants are broadly claiming all modified IL-2 proteins. Applicants surmise that the Examiner would consider the same issue as applying to the amended claims relating to cytokines and will respond accordingly.

As described above, the issued claim in the '589 patent embraces a method of identifying, among other things, a modified cytokine, such as the modified cytokine claimed in the subject application. By virtue of the issuance of this claim in the '589 patent, the Patent Office has acknowledged that the method is enabled. Since a method of identifying the cytokine is enabled, applicants submit that the cytokine itself is enabled too since the Patent Office has acknowledged that the specification enables one to make and use such a cytokine. Applicants contend that these amendments and remarks obviate the above rejection and respectfully request that the Examiner reconsider and withdraw this ground of rejection.

Rejection under 35 U.S.C. 112, second paragraph

The Examiner rejected claims 18-20 and 37-38 under 35 U.S.C. 112, second paragraph. alleging that the metes and bounds of the claim are unclear with respect to the terms "modification," and "hybridize under high stringency," "normal human interleukin-2" and

"obtainable."

In response, applicants respectfully traverse the Examiner's above rejection. With respect to the term "modification" the claim has been amended such that it no longer recites the term "modification." Newly proposed claim 18 now recites in part "differs by one to six amino acid residues" and accordingly, the metes and bounds of the claim with respect to this term are clear. With respect to the term "hybridize under stringent wash conditions" applicants have herein amended claim 18 to provide further recite "of 6X SSC at 0 °C" and accordingly, provides the wash conditions and therefore the metes and bounds of the claim with respect to this term are clear. With respect to the terms "normal interleukin-2" and "obtainable" applicants point out that the claims no longer recites such terms and thus, applicants amendment has rendered the Examiner's rejection moot. Applicants contend that these amendments and remarks obviate the above rejection and respectfully request that the Examiner reconsider and withdraw this ground of rejection.

In view of the above, each of the presently pending claims in this application is believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to withdraw the outstanding rejection of the claims and to pass this application to issue.

Supplemental Information Disclosure Statement

Pursuant to 37 CFR 1.56, 1.97 and 1.98, the attention of the Patent and Trademark Office is hereby directed to the references listed on the attached PTO/SB/08. It is respectfully requested that the information be expressly considered during the prosecution of this application, and that the references be made of record therein and appear among the "References Cited" on any patent to issue therefrom.

Applicants submit that that this Supplemental Information Disclosure Statement shall be considered pursuant to 37 C.F.R. 1.97(b)(4) since it is filed before the mailing of a first Office Action after the filing of a Request for Continued Examination under 37 C.F.R. §1.114.

A copy of each reference on PTO/SB/08 is attached.

In accordance with 37 CFR 1.97(g), the filing of this Supplemental Information Disclosure Statement shall not be construed to mean that a search has been made or that no other material information as defined in 37 CFR 1.56(a) exists. In accordance with 37 CFR 1.97(h), the filing of this Supplemental Information Disclosure statement shall not be construed to be an admission that any patent, publication or other information referred to therein is "prior art" for this invention unless specifically designated as such.

It is submitted that the Supplemental Information Disclosure Statement is in compliance with 37 CFR 1.98 and the Examiner is respectfully requested to consider the listed references.

Applicant believes no fee is due with this response. However, if any fee is due, please charge our Deposit Account No. 18-1945, under Order No. PBLI-P08-005 at the small entity rate from which the undersigned is authorized to draw.

Dated: February 23, 2004

Respectfully submitted,

By_____

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